

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/878,208 03/24/00 ANAND

N 101-87401V

026818 PM12/0700
RANBAXY PHARMACEUTICALS INC.
600 N. LEE ROAD EAST
SUITE 200
PRINCETON NJ 08540

EXAMINER

WRIGHT, S

ART UNIT

PAPER NUMBER

1626

DATE MAILED:

07/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/578,239

Applicant(s)

ANAND ET AL.

Examiner

Sonya Wright

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44 and 45 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 44 and 45 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: .

Art Unit: 1626

DETAILED ACTION

Claims 44 and 45 are pending in this application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 44 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishizumi, Kikuo et al., "Synthesis and Anxiolytic Activity of N-Substituted Cyclic Imides (1R*,2S*,3R*,4S*)-N-[4-[4-(2-Pyrimidinyl)-1-Piperazinyl]Butyl]-2,3-Bicyclo[2.2.1]Heptanedicarboximide (Tandospirone) and Related Compounds", Chem. Pharm. Bull., Vol. 39, No. 9 (1991) pp. 2288-2300; and Wu, Yao-Hua, et al., "Psychosedative Agents. N-(4-Phenyl-1-Piperazinylalkyl)-Substituted Cyclic Imides", J. Med. Chem., Vol. 12 (1969) pp. 876-881; and Khadilkar, B.M., et al. "Synthesis and Pharmacology of Some 2-[3-(4-Aryl-1-piperazinyl)propyl]-1H-benz[de]isoquinolin-1,3(2H)-diones/2.5-pyrrolidinediones", J. Indian Chem. Soc., 1986, VLXIII, page 529-530.

Applicant claims a method for making 1-(4-arylpiperazin-1-yl)- ω -[N-(α , ω -dicarboximido)]-alkanes useful as uro-selective α_1 -adrenoceptor blockers. Ishizumi et al. teach a method for preparing making 1-(4-arylpiperazin-1-yl)- ω -[N-(α , ω -dicarboximidol)]-alkanes for use as selective anxiolytic agents. Wu et al. teach a process for preparing N-(4-phenyl-1-piperazinylalkyl)-substituted cyclic imides for use

Art Unit: 1626

as psychosedative agents. Khadilkar et al. teach a process for preparing 2-[3-(Aryl-1-piperazinyl)propyl]-1H-benz[de]isoquinolin-1,3(2H)diones/2,5-pyrrolidinediones.

Ishizumi et al. teach the instant process on page 2288, chart 1, reaction A, also see page 2290, compound no. 16. Ishizumi et al. teach instant compounds when, in the instant compounds, R₁-R₅ are H, m is 0, n is 2, Q is CH, X is N, Y is O, Z is N and Z' is N.

Wu et al. teach the instant process on page 879, scheme 1, also see page 877, compounds 41-52. Wu et al. teach the instant compounds, when, in the instant compounds, R₁ and R₂ are H or OCH₃, R₃-R₅ are H, m is 1, n is 0 or 1, Q is CH, X is N, Y is O, Z and Z' are CH.

Khadilkar et al. teach the instant process and instant compounds in page 529 and page 530, Table 1, compounds 4a-4g and Table 2 compounds 3a-3g. Khadilkar et al. teach the instant compounds when, in the instant compounds, R₁ is H; R₂ is H, Cl or CH₃; R₃-R₅ are H; m is 0; n is 1; X is N; Y is O; Z and Z' are CH.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Art Unit: 1626

Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu, et al., "Psychosedative Agents. N-(4-Phenyl-1-Piperazinyllalkyl)-Substituted Cyclic Imides", J. Med. Chem., Vol. 12 (1969) pp. 876-881; New et al., US Patent 4,524,206; Ishizumi et al.; and Khadikar et al.

Determination of the scope and content of the prior art (MPEP §2141.01)

Applicant claims a method for making 1-(4-arylpiperazin-1-yl)- ω -[N-(α ,dicarboximidol)]-alkanes useful as uro-selective α_1 -adrenoceptor blockers. Wu et al. teach N-(4-phenyl-1-piperazinylalkyl)-substituted cyclic imides for use as psychosedative agents and a process for preparing them. Wu et al. teach the instant process on page 879, scheme 1, and the instant compounds on page 876, column 1, and page 877, compounds 41-52. Wu et al. teach the instant compounds, when, in the instant compounds, R₁ is H, R₂ is as defined, R₃-R₅ are H, m is 0 or 1, n is as defined, Q is CH, X is N, Y is O, Z and Z' are CH. New et al. teach a process for preparing 1-heteroaryl-4-(2,5-pyrrolidine-dion-1-yl)alkyl)piperazine derivatives. New et al. teach the instant process in column 4, lines 22-38. New et al. teach the instant compounds when, in the instant compounds, R₁ and R₂ are H, F, Cl, Br, OCH₃, OC₂H₅, CH₃, and C₂H₅; R₃ is H; R₄ and R₅ are H, C₁₋₃ alkyl, substituted or unsubstituted phenyl. Ishizumi et al. teach a method for preparing making 1-(4-arylpiperazin-1-yl)- ω -[N-(α ,dicarboximidol)]-alkanes for use as selective anxiolytic agents. Ishizumi et al. teach the instant process on page 2288, chart 1, reaction A, compound I, also see page 2290, compound no. 16. Ishizumi et al. teach instant compounds when, in compound I of chart 1, R¹ is -CH₂-CH₂-, B is (CH₂)₄ and Ar is 2-C₄H₃N₂ and in the instant compounds, R₁-R₅ are H, m is 0, n is 2, Q is CH, X is N, Y is O, Z is N and Z' is N. Khadilkar et al. teach a process for preparing 2-[3-(Aryl-1-piperazinyl)propyl]-1H-benz[de]isoquinolin-1,3(2H)diones/2,5-pyrrolidinediones. Khadilkar et al. teach the instant process and

Art Unit: 1626

instant compounds in page 529 and page 530, Table 1, compounds 4a-4g and Table 2 compounds 3a-3g. Khadilkar et al. teach the instant compounds when, in the instant compounds, R₁ is H; R₂ is H, Cl or CH₃; R₃-R₅ are H; m is 0; n is 1; X is N; Y is O; Z and Z' are CH.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the prior art references, Wu, et al. and New et al., Ishizumi et al., Khadilkar et al., and the instant claims is that the instant claims teach a broader genus than ~~both~~ ^{the} prior art references.

Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)

One of ordinary skill in the art would be motivated to utilize the process as disclosed in the references to prepare additional structurally related compounds in order to obtain additional beneficial drugs.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 44 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The above claims are directed to a process of preparing 1-(4-aryl)piperazin-1-yl)- ω -[N-(α,ω -dicarboximido)]-alkanes. The terms "esters, amides, prodrugs, or

Art Unit: 1626

metabolites, substituted . . . alkyl" and "substituted . . . phenyl" lack description in the specification. Applicant has not described any "metabolites, esters, amides, prodrugs, substituted . . . alkyl(s)" or "substituted phenyl(s)". Thus one does not know what is actually being covered by said terms. There is no description of what substituents are to be substituted on the alkyl and the phenyl groups. Also, Applicant has not indicated how to prepare any products covered by said expressions.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 44 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 44, is vague and indefinite because of the terms "esters, amides, prodrugs, metabolites, substituted . . . alkyl" and "substituted . . . phenyl". There is no indication in the specification as to what is intended by said expressions, i.e. there is no definition as to what is contemplated by said expressions.

Claim Objections

Claim 44 is objected to because of the following informalities: In claim 44, the word "amides" is on page 44, line 16, and "amides" is repeated unnecessarily in line 17. The word "amides" should be deleted in line 17. Appropriate correction is required.

Art Unit: 1626

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Wright, whose telephone number is (703) 308-4539. The examiner can normally be reached on Monday-Friday from 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane, can be reached at (703) 308-4537. The Unofficial fax phone number for this Group is (703) 308-7921. The Official fax phone numbers for this Group are (703) 308-4556 or 305-3592.

When filing a FAX in Technology Center 1600, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [joseph.mckane@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees will not communicate with applicant via Internet e-mail where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is of record an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the applicant. See the Interim Internet Usage Policy published by the Patent and Trademark Office Official Gazette on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-1235.

Art Unit: 1626

for Robert W. Hamner

Joseph K. McKane

Supervisory Patent Examiner

Group 1600

Sonya Wright

June 25, 2001